भारतीय मानक

Indian Standard

IS 3344 : 2023

वस्त्रादि — सिक्कों (टकसाल) की पैकिंग के लिए डी.डब्ल्यू. तिरपाल जूट बैग — विशिष्टि

(पहला पुनरीक्षण)

Textiles — D.W. Tarpaulin Jute Bags for Packing (Mint) Coins — Specification

(First Revision)

ICS 55.080, 59.060;67.060

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Jute and Jute Products Sectional Committee, TXD 03

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Jute and Jute Products Sectional Committee had been approved by the Textiles Division Council.

This standard was originally published in 1965. The first revision has been made in the light of experience gained since its publication and to incorporate the following major changes:

a) All amendments have been incorporated;
b) References to Indian standards have been updated;
c) Requirement and test method for oil content has been modified;
d) Test methods for length, width, mass, and breaking strength have been modified; and
e) Marking and sampling clause has been modified.

During normal course of transit and storage, jute bags filled with coins undergo rough handling. It is, therefore, a matter of great importance to lay down the requirements of jute bags which would satisfactorily withstand such normal usages. It is expected that jute bags conforming to this specification would form a satisfactory packing material for coins.

All quantities and dimensions in this standard have been expressed in the metric system. However, the foot-pound system values to which the industry is accustomed, have also been given, wherever necessary, within brackets.

The composition of the Committee responsible for the formulation of this standard is given in Annex E.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TEXTILES — D.W. TARPAULIN JUTE BAGS FOR PACKING (MINT) COINS — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the constructional details and other particulars of hemmed D.W. (double warp) tarpaulin jute bags for packing (mint) coins of dimensions 47 cm × 35 cm (or 18.5 inch × 13.75 inch) and 42 cm × 28 cm (or 16.5 inch × 11 inch).

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

IS No.	*Title*
IS 2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*second revision*)
IS 1969 (Part 1) : 2018/ ISO 13934-1 : 2013	Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method (*fourth revision*)
IS 1963 : 1981	Methods for determination of threads per unit length in woven fabrics (*second revision*)

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Lot — All bales of jute bags purporting to be of specified dimensions and quality, containing one definite number of bags, delivered to one buyer against one despatch note.

3.2 Bale — A rectangular or square pressed rigid package containing jute bags and covered with bale covering with outer layer stitched, and bound by metal hoops in conformity with IS 2873.

3.3 Contract Weight (Bale) — The weight as obtained by multiplying the nominal weight of a bag and specified number of bags per bale (*see* Note 1 in Table 2).

3.4 Corrected Net Weight (Bale) — The weight obtained by adjusting the actual net weight on the basis of actual regain to the contract regain (*see* Note 2 in Table 2).

3.5 Contract Regain — The contract moisture regain is the percentage regain on the basis of which the corrected net weight is calculated.

3.6 Ends — The warp threads of a fabric.

3.7 Porter — The value obtained by counting, in bags made of jute tarpaulin as marketed, the number of warp threads per full gauge length of 47 mm (or 37/20 inch) and dividing it by the number of warp threads per split, which here is 4.

NOTE — This definition of porter, based on the Indian practice refers to the finished fabric, and has to be distinguished from the Dundee practice, according to which porter is evaluated in terms of loom reed used in weaving the cloth.

3.8 Pick (or Shots) — The weft or filling threads of a fabric.

NOTE — Shots per inch = picks per decimetre × 0.254

3.9 Joined Bag — A bag made out of two pieces of jute sacking.

4 GENERAL REQUIREMENTS

4.1 Tarpaulin

The bags shall be made from single pieces (joined bags being not permitted) of double warp, plain jute tarpaulin of uniform construction and with the warp running along the length of the bags. The weight per square metre of the tarpaulin used in the fabrication of the bags shall be 550 g.

4.2 Seam

The sides of the bags shall be sewn with overhead or herakle stitches using 2 strands of three-ply jute twine of 380 tex × 3 for overhead stitch and 300 tex × 3 for herakle stitch. The sewing shall be done through two thicknesses of cloth if both the edges to be sewn selvedges, through three thicknesses of cloth if one edge is a selvedge and the other raw edge, and through four thicknesses of cloth if both the edges are raw edges. The stitching shall be of even tension throughout with all the loose ends securely fastened. There shall be no seam at the bottom of the bag. The number of stitches per dm shall be between 9 to 11.

NOTE — The count of jute twine is given for guidance only.

4.3 Hemming at the Mouth

At the mouth of the bags, the raw edges of cloth shall be turned over first to a depth of about 1 cm and then to a depth of about 2 cm and the three layers of cloth thus formed shall be hemmed with cotton yarn of Nf 14/3 (or 36 tex × 3) (*see* Note 1). The number of stitches per 10 cm in the hem shall be between 24 and 26.

NOTES

1 French count (Nf) = number of 1 000 m hanks per 0.5 kg.

2 The count of jute twine is given for guidance only.

5 SPECIFIC REQUIREMENTS

5.1 The tarpaulin and the bags (*see* Fig. 1) made out of it shall conform to the requirements specified in Table 1.

5.2 The bales containing the bags shall conform to the provisions specified in Table 2.

5.3 Contract Regain

The contract moisture regain shall be 20 percent.

6 PACKING AND MARKING

6.1 Packing

The bags shall be packed in bales as specified in IS 2873 or as per agreement between the buyer and the seller.

6.2 Marking

The bales shall be marked as specified in IS 2873. Additional markings shall be made as stipulated by the buyer or as required by the regulations or laws in force.

6.2.1 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.

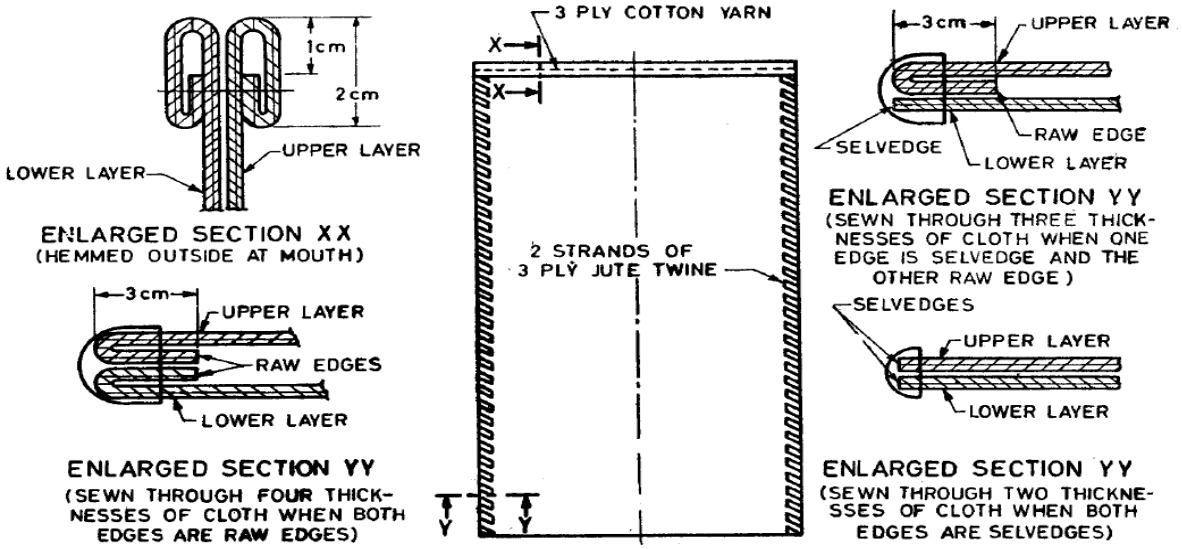


FIG. 1 D.W. TARPAULIN JUTE BAG

Table 1 Requirements of Tarpaulin and Bags

(*Clause* 5.1)

Sl No.	Characteristics	Requirement	Tolerance	Method of Test, Ref to
(1)	(2)	(3)	(4)	(5)
i)	Dimensions of a bag, cm (inch)			
	a) Size 1 — Outside length	47 (18 ½)	+ 3 cm - 0	**B-6**
	a) Size 1 — Outside width	35 (13 ¾)	+ 3 cm - 0	**B-6**
	b) Size 2 — Outside length	42 (16 ½)	+ 3 cm - 0	**B-6**
	b) Size 2 — Outside width	28 (11)	+ 3 cm - 0	**B-6**
ii)	Weight per bag, g			
	a) Size 1	210	+ 20 - 15	**B-4**
	b) Size 2	155	+ 15 - 10	**B-4**
iii)	Ends per dm (or porter)	86 (10)	± 5	**B-7**
iv)	Picks per dm (or shots per inch)	48 (12)	± 3	**B-7**
v)	Breaking load of tarpaulin strip method (100 mm × 200 mm): kg (lb), *Min*			**B-8**
	Warpway	170 (375)	-	-
	a) Weftway	180 (397)	-	-
vi)	Breaking load of seam, kg (lb), *Min* (strip size 50 mm × 200 mm)	67 (148)	-	**B-9**

NOTES

1 For dimensions of bag with different specified values, such as agreed to between the buyer and the seller, the same tolerance of cm shall apply.

2 Weight per bag specified above applies to bags having selvedges on one side and raw edges on the other. Weight of bags of other dimensions and type shall be proportional to the standard bag (210 g, 47 cm × 35 cm or 155 g, 42 cm × 28 cm) and calculated on the basis of the area of the tarpaulin including the hem and seamed portion, with tolerance of $^{+10}_{-7.5}$ percent on bag weight.

Table 2 Requirements of Packed Bales

(*Clause* 5.2)

Sl No	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Total number of bags per bale	Not less than the declared number	**B-5**
ii)	Contract weight of a bale	*See* Note 1	-
iii)	Corrected net weight of a bale	Not less than contract weight	**B-2**
iv)	Moisture regain, percent, *Max*	22	**B-3**
v)	Oil content on dry de-oiled material basis, percent, *Max*	3	**B-10**

NOTES

1 Contract weight of a bale is calculated as follows:

Contract weight of a bale = nominal weight of a bag × specified number of bags per bale

2 Corrected net weight of a bale is calculated as follows:

$$\text{Corrected net weight of a bale} = \frac{\text{Net weight} + (100 + \text{Contract regain percent})}{100 + \text{average moisture regain percent}}$$

7 SAMPLING AND INSPECTION

Unless otherwise agreed to between the buyer and the seller, the procedure for sampling shall be as given in Annex A and the procedure for testing and inspection as given in Annex B.

8 CRITERIA FOR CONFORMITY

The lot shall be considered as conforming to the requirements of the standard, if the following conditions are satisfied:

a) The total of the corrected net weight of the bales under test is not less than the total contract weight of the bales (*see* Table 2);

b) The number of bags in each bale under test is not less than the number marked on the bale (*see* Table 2);

c) The average moisture regain percent of the bags under test is not more than the specified percentage (*see* Table 2);

d) The average oil content of the bags under test is not more than the specified percentage (*see* Table 2);

e) The dimensions of at least 90 percent of the bags under test are in accordance with the requirements specified (*see* Table 1). In the remaining bags, no bag shall have dimensions less than 1.5 cm below the specified values;

f) The weight of at least 90 percent of the bags under test is in accordance with the requirements specified (*see* Table 1). In the remaining bags, no bag shall have weight less than 10 percent below the specified value;

g) The average ends per decimetre of the bags under test is in accordance with the requirement specified (*see* Table 1);

h) The average picks per decimetre of the bags under test is in accordance with the requirement specified (*see* Table 1);

j) The average breaking load values of the bags under test for both warp and weft directions are not less than the requirements specified (*see* Table 1); and

k) The average breaking load of seam of the bags under test is not less than the requirement specified (*see* Table 1).

ANNEX A

(*Clause* 6.1)

SAMPLING FOR D.W. TARPAULIN JUTE BAGS

A-1 SAMPLING PROCEDURE

The following minimum number of bales and bags shall be taken at random from the lot and subjected to corresponding tests (*see* Annex B).

A-2 GROSS WEIGHT

For evaluating the gross weight of bales, 10 percent of bales, selected from the lot, shall constitute the test sample.

A-3 REQUIREMENTS OTHER THAN GROSS WEIGHT

A-3.1 For assessing the conformity to the requirements, other than gross weight of bales, the number of bales to be selected from the lot shall be in accordance with the following Table:

Sl No.	*No. of Bales in the Lot*	*No. of Bales to be Drawn and Opened for Inspection*
(1)	(2)	(3)
i)	Up to 10	1
ii)	11 to 20	2
iii)	21 to 100	3
iv)	101 to 150	4
v)	151 to 200	5
vi)	201 to 250	6
vii)	251 to 300	7
viii)	301 to 350	8
ix)	351 to 400	9
x)	401 to 500	10

A-3.2 From the bales selected as in **A-3.1**, the test sample shall be drawn as follows:

Sl No.	*Tests*	*Test Sample*
(1)	(2)	(3)
i)	Tare weight (of baling hoops and all other packing materials)	The bales selected as in **A-3.1**
ii)	Total number of bags per bale	Two bundles of bags from each bale selected as in **A-3.1**
iii)	Moisture regain, percent	10 bags from each bale selected as in **A-3.1**
iv)	Length and width	
v)	Ends and picks	
vi)	Weight per bag	10 percent of bags from each bale selected as in **A-3.1**
vii)	Breaking load — sacking	One bag from each bale selected as in **A-3.1** subject to a minimum of three bags
viii)	Breaking load — seam	
ix)	Oil content, percent	

ANNEX B

(*Clauses* 6.1 *and* A-1)

B-1 TESTING AND INSPECTION PROCEDURE

Testing and inspection of the lot as laid down below shall be carried out on the samples drawn in accordance with Annex A.

B-2 WEIGHT OF BALES

B-2.1 Determine the total gross weight of the bales in the test sample (**A-2**) from the gross weight of each bale taken up to nearest kilogram (W_g).

B-2.2 Remove the baling hoops and all other packing materials of the bales and weigh them together up to nearest kilogram. Calculate the average tare weight of bale and multiply by the number of bales weighed (W_t).

B-2.3 The total net weight of bales under test, $W_n = (W_g - W_t)$.

B-2.4 Determine the total corrected net weight (W) of bales under test by the following formula:

$$W = \frac{W\text{n} + (100 + \text{contract regain percent})}{100 + \text{average moisture regain percent of bales (B}-3\text{)}}$$

B-3 MOISTURE REGAIN

B-3.1 Determine the moisture regain in each bag (**A-3.2**) on opening the bales (**A-3.1**) by the use of a suitable moisture meter.

NOTE — IJIRA (Indian Jute Industries' Research Association) moisture meter* may be used for the purpose. This meter works on the principle of measuring the electrical resistance which changes with moisture content of the material. The specimen (jute products) is placed under the electrode gun having two poles of specially designed spring-loaded electrodes. The small amount of current passing through the electrodes is amplified and recorded on the meter calibrated against the actual moisture regain, based on oven-dry method, of the material. A separate chart calibrating the actual moisture regain, based on oven-dry method, of the material may also be used. The instrument shall be operated according to the manufacturer's instructions.

B-4 WEIGHT PER BAG

Weigh each bag (**A-3.2**) to the nearest 5 g after tests for **B-2** and **B-3.**

B-5 NUMBER OF BAGS PER BALE

Count the number of bundles of bags in each bale (**A-3.1**) and number of bags in each bundle (**A-3.2**). From the above, determine the total number of bags in each bale under test.

NOTE — There should be no joined bags in each bale.

B-6 LENGTH AND WIDTH

Lay each bag (**A-3.2**) flat on a table free from creases and wrinkles and measure the outside length and outside width about the centre to the nearest 0.5 cm.

B-7 ENDS AND PICKS

Count the ends and picks from each bag (**A-3.2**) in one and two places respectively with a suitable gauge measuring 5 cm. Determine the average ends and picks per decimetre of the bags under test in accordance with IS 1963.

B-8 BREAKING LOAD OF SACKING

Test from each bag (**A-3.2**) two warpway and two weftway specimens for breaking load with 100 mm wide ravelled strips and 200 mm between grips of a strength tester having a constant-rate-of-traverse of 460 mm (or 18 inch) per min according to IS 1969.

NOTE — Tests for breaking load of sacking may be carried out in the prevailing atmospheric conditions with relative humidity between 40 percent and 90 percent.

B-9 BREAKING LOAD OF SEAM

Test one test specimen for breaking load of seam from each side of the bags (**A-3.2**) taking 200 mm between grips with the seam near about the centre, using constant-rate-of-traverse machine operating at 460 mm (or 18 inch) per min.

Prepare the test specimens in the form of a double 'T' with 100 mm of seam and 50 mm width of fabric as shown in Fig. 2.

NOTE — Tests for breaking load of seam may be carried out in the prevailing atmospheric conditions with relative humidity between 40 percent and 90 percent.

B-10 OIL CONTENT

From each bag take one representative strip (**A-3.2**) and determine oil content on dry de-oiled material basis by soxhlet extraction using trichloroethylene as solvent, by the following formula:

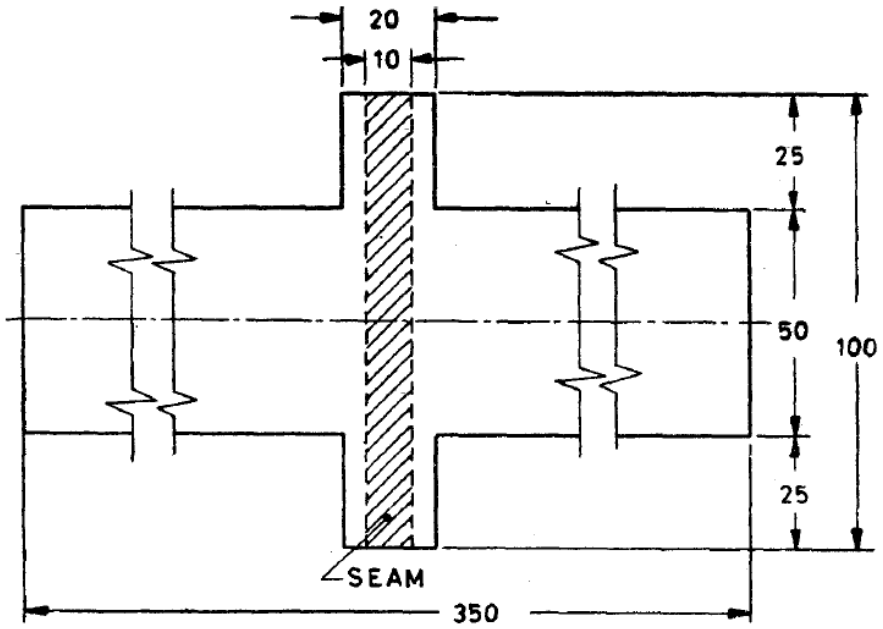
Oil content, percent, on dry de-oiled material basis $= \frac{W_o}{W_d} \times 100$

where

W_o = weight, in g, of the extracted material (including natural fat and wax and batching oil); and

W_d = oven-dry weight, in g, of the fabric after extraction.

*Mention of the name of the specific instrument is not intended to promote or give preference to the use of that instrument over others not mentioned.



All dimensions in millimetres.

FIG. 2 SIZE AND SHAPE OF TEST SPECIMEN FOR SEAM STRENGTH

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Jute and Jute Products Sectional Committee, TXD 03

Organization	*Representative(s)*
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CSIR - Indian Institute of Toxicology Research, Lucknow	DR V. P. SHARMA
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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

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